USDA Studies on Temperature Tolerance of Frozen Foods

Representatives of industrial and government organizations met in Albany, California, July 30 to August 1, to discuss results of the comprehensive research project on time-temperature tolerance of frozen foods that was begun several years ago and is now well along in the Western Utilization Research Branch of U. S. Department of Agriculture.

The purpose, explained by M. J. Copley, Chief of the Branch, was to counsel with representatives selected by interested organizations on ways and means of achieving maximum industrial usefulness of the results.

"The overall effect of this project," Dr. Copley said, "will be to provide much-needed information for use in the commercial handling of frozen foods from producer to consumer. As frozen foods move from packer to warehouse to distributor to retail store and consumers, they move in diminishing unit quantities and into custody or ownership of an increasing number of people.

"From a few at the beginning," he said, "thousands and eventually millions must handle and use our commercial frozen foods. Then add the fact that during the past 25 years, volume and number of frozen foods have increased from minor to major industrial levels. In those facts lie the background of the project.

"The measurement of tolerance of numerous frozen foods to levels of temperature for periods of time," he said, "is obviously very complex. The project has therefore emphasized certain logical procedures, such as wide sampling from major commercial areas and special concern for changes with the fastest rates at critical temperature levels.

"All of us," he empasized, "want to warn against hasty and inaccurate generalizations. The project is producing many facts on stability at sufficiently low temperatures and on damage at critically high temperatures. These facts are usable only when completely understood. Their usefulness can be harmed if they are hastily lumped into general statements.

"In this project," Dr. Copley said further, "various groups in the frozen foods industry have contributed facts, advice, and material assistance. Without that cooperation the project could not have been conducted on its present scale nor could we hope to obtain the practical results that we are getting. That cooperation and assistance have been very helpful."

W. B. Van Arsdel, Assistant Chief of the Western Branch, described the planning and conduct of the project. The work was initiated, he said, in 1948. Testing rooms were constructed that permit accurate control and systematic variation of product temperatures on schedules that represent ranges of commercial experience. Some 50,000 commercial samples have been used thus far, gathered from packers in various parts of the country. Patterns of exposure to temperatures have included moderate and extreme conditions. Testing of samples began in 1950. Now some products have been studied during 2 or 3 seasons. Testing has covered the range of commonly used methods, including chemical, physical, and organoleptic tests.

At the conclusion Dr. Copley said that "the results establish, for each frozen food just how much faster quality change takes place at 10 degrees, 20 degrees, or 30 degrees than at 0 degrees. Products change at different rates under the same conditions. Partial damage, no matter how minute or slightly detectable on casual examination, is never reversed by reduction of temperature. By and large, geographical variations were found to be small. Within limits, certain changes in raw material and processing (including packaging) strengthen frozen foods against temperature hazards."

"The major value of the project," he said, "lies in its comprehensiveness and its thoroughness. In the past frozen foods have been aided by a great deal of competent research, which has enabled the industry to reach maturity in record time. But it has needed this broad project, which indeed has been urged by various sectors of the industry, as a foundation for coordinated development —including manufacture, transport, storage, distribution, retail sale, and use by consumers."

FROZEN FRUITS

Results on frozen peaches were presented by E. F. Jansen, on strawberries and red sour pitted cherries by D. G. Guadagni, on raspberries by C. C. Nimmo, and on frozen concentrated orange juice by R. J. McColloch. Work on the latter product was done at the Pasadena laboratory of the Western Branch.

Studies on peaches and strawberries covered the years 1950-54, and 50 lots from major producing areas(representing about 10,000 packages of each fruit) have been obtained from packers. These reports (like all reports during the conference) dealt with detailed quantitative measures of changes in product as related to temperature sequences.

PEACHES — The report on peaches showed the special importance of atmospheric oxygen in headspace as a cause of browning, the close relationship of headspace and nonhermetic package to browning rate and to rate of loss of added ascorbic acid, and also the influence of less important factors. Among fruits, peaches rank high in sensitivity to temperatures above 0 degrees F. In the general run of packs in composite containers, only a few days at 25 degrees produced serious browning, whereas only a few weeks were required for the same change at 10 degrees F. At O degrees F. (effectively maintained or with only slight fluctuation above and below) color was held for more than a year. Of various tests used, a count of brown slices per package is simple as well as reliable.

STRAWBERRIES, according to Mr. Guadagni, lost color, flavor, and ascorbic acid at about the same rates, which increased rapidly as temperatures rose beyond 10 degrees F. That is, the rate increased 2 to 3 times for each 5-degree rise in temperature. As compared with peaches, strawberries are slightly more stable, largely because browning in peaches is readily apparent. As with peaches, however, quality was retained much better at elevated temperatures in hermetic than in nonhermetic containers.

R.S.P. CHERRIES—About 2,000 packages of red sour pitted cherries, from two producing areas, were used. As with peaches, browning due to atmospheric oxygen was an important result of exposure to temperatures above 0 degrees F., according to Mr. Guadagni. Another readily apparent change was an increase in firmness of cherries, which is less important than color but indicates extent of experience above 0 degrees F. At 20 degrees F., cherries held 3 to 4 weeks made good pies and even after somewhat longer periods the pies were considered satisfactory.

RASPBERRIES — About 4,000 packages of raspberries were obtained from a large producing area, according to Dr. Nimmo. In general, frozen raspberries are more stable than peaches or strawberries. Ratio of color in fruit to color in sirup indicates temperature experience, since rate of movement of color

from berries to sirup is faster as temperature increases. As with strawberries, rate of loss of ascorbic acid increased with increasing temperature.

ORANGE JUICE — The studies of frozen concentrated orange juice, reported by Dr. McColloch, involved about 10,000 6-ounce cans representing 9 packs of California product obtained during the years 1950 to 1955. Four of the 9 lots had been mildly heat-treated during manufacture to increase cloud stability. Loss of cloud was found to be the first undesirable change in quality brought about by unfavorable temperatures. Flavor was comparatively more stable than cloud and vitamin C was found to be more stable than either cloud or flavor. Thawed orange concentrates became unpalatable before as much as 10 percent of the vitamin C was lost. Accumulation of small degrees of temperature damage, which singly did not cause detectable change, ultimately resulted in change in flavor. The longer some samples were held at 0 degrees F., the shorter was the period they could be held at 40 degrees without cloud loss.

FROZEN VEGETABLES

Experimental procedures and data on frozen green beans were presented by W. F. Talburt, on cauliflower and spinach by M. M. Boggs, and on peas by R. L. Olson.

GREEN BEANS—Ten lots of green beans, representing 4 varieties from 4 major areas, were used during the 1952-55 seasons. The 9,000 commercial retail packages were obtained from processing plants. The data Mr. Talburt presented showed that the effect of processing on initial color was greater than the effect of geographic origin or variety. He used graphs to illustrate progressive chemical deterioration in chlorophyll and loss of ascorbic acid in samples during storage at 0 degrees to 30 degrees F. Color and flavor changes noted by trained judges were found to be correlated with chemical changes. Averages of four lots showed that flavor changes were detectable within about a month at 20 degrees F. as compared to slightly more than a year at 0 degrees F.

CAULIFLOWER & SPINACH—Experiments on cauliflower and spinach were started with 500 retail packages of each in 1955 and will continue for several seasons. Miss Boggs discussed the effect of storage temperatures above 0 degrees F. on the development of brown discoloration and off-flavor, along with a decrease in ascorbic acid. In spinach at 10 degrees F. and above there was considerable color deterioration, as measured by loss of chlorophyll, within several months. Flavor appeared to be more stable in spinach than in cauliflower. More package-to-package variation was found in these products than in peas and green beans.

PEAS—Results on 6 lots of peas of 4 varieties, obtained from 3 major producing areas during the 1952-55 seasons, were discussed by Mr. Olson. Differences among varieties were greater than among geographic areas. About 6,600 10-ounce retail packages have been used to study the effect of 20 different time-temperature conditions ranging from —30 degrees to 40 degrees F. and from 1 day to 12 months. Color and flavor changes ranked by trained judges were found to be correlated with the changes in chlorophyll and ascorbic acid. The first detectable flavor change occurred in about a month at 20 degrees F. and nearly a year at 0 degrees F.; color changes were noted within 2 to 3 weeks at 20 degrees F. and a half-year at 0 degrees F. Mr. Olson said the data indicate that spinach is more stable than peas or green beans. Loss of color occurs in beans faster than in peas.

FROZEN POULTRY

Studies on commercial types of frozen raw poultry, reported by A. A. Klose, have established the generally good to excellent quality that can be expected from present commercial products that are processed, packaged, and stored in accordance with best practices. Time-temperature-tolerance tests on poultry are incomplete, but considerable data have accumulated on ready-to-cook roaster turkeys and fryer turkeys and packaged cut-up chicken broilers and stewing hens. Measurements were made of rancidity and surface dehydration, which are generally recognized as the two most critical factors. While turkeys have a shorter storage life than chickens under comparable conditions because of their less-stable fat, nevertheless ready-to-cook turkeys packaged in a relatively moisture-impermeable material and held at O degrees F. or below developed only minor losses of quality in a year, which is somewhat longer than normal commercial requirements. Fluctuations in product temperature below 20 degrees F. in general do not cause much, if any, more deterioration that a steady temperature equal to the average of the fluctuations.

Well packaged cut-up chicken fryers have been found to retain their quality for a year at temperatures of 0 degrees F. or below. With less protective packaging, detectable changes appear much sooner. Stewing chickens, which contain much more exposed depot fat than the fryers, develop detectable rancidity sooner. At temperatures of 10 degrees to 20 degrees F., significant off-flavor developed within 3 months in stewing hens or in inadequately packaged frying chickens.

Surface dehydration, with loss of fresh frozen appearance, increases with increase in storage temperature, but with the adequate moisture-vapor-proof wraps now available dehydration should not be a problem. However, because of the possibility of improper packaging and rough handling in storage, distribution and merchandising, quality deterioration at temperatures below 10 degrees F. may as likely occur from package failure as from excessive times and temperatures.

The flavor stability of frozen turkey dinners, turkey pies, and fried chicken has been studied at temperatures from —30 degrees F. to 20 degrees F., Helen L. Hanson reported. Some of the samples were commercial products; some were prepared in the laboratory. Significant rancidity developed in products held 1½ to 2 months at 20 degrees F. At 10 degrees F., fried chicken developed a rancid flavor in 3 months. The turkey products at 10 degrees F. and below lost some of the flavor of freshly cooked turkey during storage, but the changes took place slowly. After a year at 10 degrees F. the flavor of these products was not appreciably different from those stored at —10 degrees F. This unexpected flavor stability at 10 degrees F. is at least partially due to the common practice of discarding turkey fat rendered during cooking in preparing the products for freezing. At 0 degrees F., the fried chicken developed stale or rancid flavors after 6 months, but flavor chanes in turkey dinners and pies were slight. There was no detectible differenec in flavor of turkey dinners and pies held at fluctuating temperatures and those held at constant temperatures midway between the extremes.

With foods such as chicken a la king, which contain sauces or gravies, and with custards and puddings containing thickening agents, fluctuation in the range of —10 degrees F. to 10 degrees F. and definitely more damaging than the constant midpoint temperature. The primary undesirable change is the curdled appearance and liquid separation when samples are thawed. These changes can be prevented in sauces and gravies for a year at constant 0 degrees F. by the use of waxy rice flour, and they can be prevented for several months in the custard and puddings. When these products were stored at 10 degrees F., however, changes occurred within a few weeks. Fluctuating temperature from —10 degrees to 10 degrees F. resulted in changes in much shorter periods than at zero. Stability above zero was improved, however, by the cases, by variation in proportion of ingredients.

FROZEN ASPARAGUS PACK HITS NEW HIGH

The 1956 pack of frozen asparagus amounts to an all-time high of 36,194,459 pounds, according to a preliminary survey just completed by the National Association of Frozen Food Packers, This compares with the previous record pack of nearly thirty-three million pounds in 1953, and represents a 26 percent increase over last year's pack.

Regional production departed considerably from the general pattern of the past few years. A slight increase in the Midwest pack was more than offset by

(Continued on Page 16)

Figure 1. Slosser type spray boom in down position, adjusted for 42" row spacing. Note floating action of boomlet which permits following ground contour.

Figure 2. Four row Slosser type boom in the up position with the boom adjusted for minimum width for transport. Note lift link to tractor hydraulic control.

AGRICULTURE

An Improved Spray Boom For Row Crops

By GEORGE J. BURKHARDT *and*
L. P. DITMAN
University of Maryland, Agricultural Experiment Station, College Park, Md.

The use of sprays for the control of insects, diseases, and weeds has gradually increased until today only a few crops are grown which do not receive some type of spray treatment in the normal process of production. Where the insect or disease develops on the underside of the leaf, as for example, the Mexican bean beetle on beans or the cabbage looper on broccoli, accurate control of the location of the spray nozzles with respect to the plant is important. To secure adequate underleaf coverage nozzles must operate close to the ground and usually be directed upward. For consistent results they must remain in this position during the spraying operation.

Wide spray booms are desirable to speed up and reduce the cost of application but when the spray boom is appreciably wider than the vehicle on which it is mounted it becomes difficult to maintain the location of the outer nozzles in even normally smooth fields. When a 6-row boom is rigidly mounted on a tricycle type tractor for spraying 40" rows the wheel tread of the tractor is 80" and the length of the boom is 240". If the nozzles on such a boom are carried 6 inches above the ground when level, one tractor wheel need drop into a hole only 3 inches deep to have the end nozzle hit the ground. Even on a 4-row boom a hole 4 inches deep will likewise cause the end nozzle to hit the ground. A boom designed to maintain effective nozzle placement was described by John W. Slosser* in *Agricultural Engineering*, November, 1945, for spraying potatoes. The general principle of this boom has been adopted and the name "Slosser Type Boom" has been generally used for the equipment.

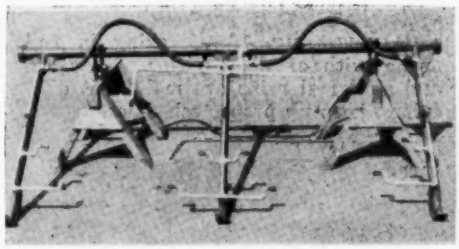

Figure 3. Two row Slosser type boom, showing arrangement of nozzles and hose connections for flexibility.

The boom consists primarily of a rigid bar mounted crosswise of the tractor on which individual boomlets for each row are mounted. One end of each individual boomlet rides on the ground when in spraying position. The spray nozzles, suitably arranged for the work to be done, are mounted on the boomlets and and thus follow the ground contours readily. Means are provided for raising the boomlets when turning or when traveling in reverse.

Since this type of spray boom is not available commercially, plans have been drawn from which a machine shop may construct a 4-row boom. Each model of tractor will require different parts for mounting the boom and in some cases the design of the boom itself must be altered. Generally this type of boom with front end mounting can be used only on tricycle type tractors as the wheel base of most 4-wheel tractors is too short to permit effective operation of the boomlets.

Plans have been drawn to fit a Farmall C or Super C. By changes in the mounting parts, and the lift link, the boom can be used on most tricycle type tractors.

To place the equipment where it can most easily receive the attention of the operator it is mounted at the front of the tractor in the approximate position of the front shovels on many row crop cultivators. In fact, on many tractors, the mounting for front cultivator gangs can be used for mounting the spray boom.

The boom itself consists of 3 pieces of standard pipe. The center section of 2" pipe is mounted just back of and over the front wheels (Figure 1) with enough clearance to permit free movement of the center boomlet. It is supported from the tractor mounting brackets by a boom support arm on each side of the tractor. It is centered under the tractor and held by two stop collars against the support arms.

The outer sections, of 1½" standard pipe, are made to slide into the center section and are held in position by the pin which locates the intermediate boomlet. This pin also adjusts the row spacing in 2" steps from 30" to 42" and holds

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* Contribution No. 2724 of the Maryland Agricultural Experiment Station, Department of Agricultural Engineering and Entomology, cooperating.

CROPS and WEATHER

BEANS

DELAWARE & MARYLAND, Aug. 20 — Limas: Harvesting in Sussex and Kent Counties, Delaware, and in Caroline County is increasing but peak is not expected for some time.

BERLIN, MD., Aug. 17—Limas: Looking good. Pack only late crop; will start around September 15.

EASTON, MD., Aug. 21 — Limas: Our acreage was planted late. Prospects at present good for normal crop.

NEW YORK, Aug. 22—Snap: Harvest is at peak but lighter than week before. Expect large crop.

NORTH ROSE, N. Y., Aug. 15 — Snap: Yield per acre heavy. Quality running excellent.

STERLING, N. Y., Aug. 15—Snap: Yield per acre tremendous. However, beans are all coming at once so we do not expect our total pack to be any larger than last year. Season late; acreage being abandoned.

PENNSYLVANIA, Aug. 22 — Snap: Weather conditions are good generally. Harvest in volume with excellent quality although light yields in wax.

Limas: Plenty of mildew in evidence in Lancaster area; need rain.

TRI-STATES, Aug. 21—Snap: First part of week had two days of rain, giving much help to crops because of dry ground which had built up in past two weeks. Harvest in Western Maryland continues with lull in picking this week. Quality remains good and 2.2 ton yields.

Limas: Temperatures mostly in mid 70's with lows averaging in upper 60's and highs in upper 80's. Harvest increasing on Peninsula with large crop forecast in Delaware. Downey mildew reported generally throughout area.

WISCONSIN, Aug. 22—Snap: Had normal temperatures with a low of 31 degrees but no frost damage reported. Harvest is in heavy volume with more than a 3 million case pack expected as compared with 1.9 million cases in 1955. Expect harvest to last another two weeks.

GREEN BAY, WIS., Aug. 20—Green: We and other canners working seven days a week and around the clock. Ideal growing conditions. Crop heavy, quality never better.

Limas: Will begin in about a week. Looks like one of our best crops.

OCONOMOWOC, WIS., Aug. 18 — Green: Yielding exceptionally well with good quality. Latest plantings were treated this week for leaf hopper with excellent control.

CORN

DELAWARE & MARYLAND, Aug. 20 — Sweet: Pouring into canneries in increasing volume from important commercial counties in Northern Delaware and Northeastern Maryland. Excellent yields reported with nearly a quarter of the crop picked in this area. Corn borer, sap beetles and fall armyworm damage was reported as light to moderate. About two-thirds of the crop in the two State area as a whole is now in the roasting ear stage. Corn needs rain in the Eastern Shore counties bordering the Chesapeake Bay, but dry weather thus far has caused little or no damage.

ILLINOIS, Aug. 16 — Packing in full swing with excellent yields. Bunching and abnormal rains are making it difficult to keep up proper schedules.

INDIANA, Aug. 22—Ideal weather for corn.

CAYUGA, IND., Aug. 20—Sweet: Our first 355 acres averaged only 52 cases per acre. The fields had too much early Stewarts Wilt, too much rain, and too many weeds. The next 300 acres should run 90 cases per acre. This is quite a lot less than we anticipated before we started canning. If cool weather continues will be able to keep right up with harvest. Do not expect to pack any standard corn, and very little extra standard. So far have packed 95 percent fancy.

EASTON, MD., Aug. 21—Acreage about same as 1955; yield up 50 percent.

MINNESOTA, Aug. 22—Last week had favorable moisture and low temperatures. Yields are not as high as anticipated earlier; expect an 8 million case pack now.

NEW YORK, Aug. 22—Cool weather has delayed ripening, which is already two weeks late. Will start in limited way next week.

OHIO, Aug. 22—All plants underway with improving yields following low ones damaged from June rains. Now getting 2 tons per acre.

CIRCLEVILLE, OHIO, Aug. 15—Not turning out as well as we had anticipated due to presence of water damage and nubbin ears. Excess rains in July made for a lot of grass which makes picking difficult. Quality good but looks like our costs will be much higher than last year.

PENNSYLVANIA, Aug. 22—Sweet: In the Southeast section the harvest is at the peak with good quality. Yielding 3 tons per acre.

TRI-STATES, Aug. 21—Sweet: In peak of harvest ground was dry until rains of August 20 and 21 which stopped picking for a day in most places. Quality still reported as excellent. Better than average yields; up to 3 tons and more.

WISCONSIN, Aug. 22—Sweet: Harvest underway at all plants but cool weather delayed it some. They are reported getting 3 to 4 tons per acre and a 30 case cutoff for whole kernel. This makes for an 8 to 9 million case pack against 5 million in 1955, although there is danger of frost in September, which would cut total pack. Very little insect damage.

GREEN BAY, WIS., Aug. 20—Never looked better; good yields and excellent cut-off. Quality superb.

OCONOMOWOC, WIS., Aug. 18 — Early varieties now being harvested are producing very clean corn with ears well developed. Yields generally have been running well above normal. Later varieties look extremely good as weather has been most satisfactory for good development. Late planted fields will receive some additional corn borer treatment next week, but infestation is not serious. Control of ear worm was begun this week and will be continued as late fields enter the silking stage.

SUSSEX, WIS., Aug. 15—Still looks good. Looks like a 4 ton yield or better. We plan to start on August 18. The only thing that could hurt prospects is an early frost and we've had one as early as August 29.

ILLINOIS, Aug. 22—A reported pack of 3,310,00 cases or 79 percent of 1955 pack.

CIRCLEVILLE, OHIO, Aug. 15 — Packed about 20 percent less than last year.

OCONOMOWOC, WIS., Aug. 18—Packing will be completed today.

SUSSEX, WIS., Aug. 15—Pack finished on August 14, two days lacking eight weeks, and the latest in history by one day. Later peas did not do as well as previously anticipated so the crop was just slightly under 90 percent on the late Sweets and about 80 percent on the early Sweets, and 70 percent on Alaskas, with an overall pack of about 85 percent.

TOMATOES

DELAWARE & MARYLAND, Aug. 20—Harvest on Peninsula continuing at a high level with picking being about one-third completed.

INDIANA, Aug. 22—First pickings were light, about one-half to 1 ton per acre, due to cool weather. Crop looking good but some early blight reported.

CAMPBELLSBURG, IND., Aug. 17—Acreage 3 percent more than 1955. Yield looks to be one-third greater than 1955. Condition of crop excellent.

CONVERSE, IND., Aug. 15—Acreage up 30 percent. Prospective yield 100 percent of last year.

PORTLAND, IND., Aug. 15—Crop in this area looks good except for 15 percent loss of acreage by drowned out spots in most fields because of excessive rains. Need good weather from here on out to get 85 percent of normal yield. Started this week in a small way; about one week late.

TRAFALGAR, IND., Aug. 15—Acreage up 20 percent. Yield per acre three weeks ago looked excellent, but now we feel it will be only 75 to 80 percent of last year.

WELLSBORO, IND., Aug. 15—Have 125 acres contracted and at present our crop is about 30 percent ahead of last year. We had only 50 percent production from our contracted acreage last year and averaged only 6.5 tons per acre.

BERLIN, MD., Aug. 17—Big week looks like a flop. Next week could make up for the past two poor weeks, but who knows.

NEW JERSEY, Aug. 22—Prospects for crop appear to be excellent this year. Yield of 9.5 tons per acre is forecast. Had only 4 tons per acre in 1955 when the yield was cut by severe drought. Cool evenings have slowed ripening somewhat and the season remains about a week later than usual. Quality is generally excellent with high percentages in the top grade bracket. The indicated crop in the State of 234,000 tons is the third highest in the nation this year, with California and Indiana ranking first and second respectively, it is reported.

NEW YORK, Aug. 22—Cool weather has delayed ripening, which is already two weeks late. Only two plants have started packing and volume is not expected until after Labor Day.

STERLING, N. Y., Aug. 15—Look good in the fields. Yield will depend on frost line. Processing will start a week to 10 days late.

WILLIAMSON, N. Y., Aug. 16—Crop looks very good. Indications are now that the crop should yield 11 to 12 tons per acre. Harvest will start August 27, about one week later than usual.

(Continued on Page 15)

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NEWS and Personals

New York Summer Outing—More than 350 processors, suppliers, and friends were in attendance at the Annual Summer Outing of the New York State Canners & Freezers Association at the Oak Hill Country Club in Rochester on Tuesday, August 7. Over 150 of this total played golf and more than 200 prizes were awarded to golfers and to lucky ticket holders for the affair. This get-together and day of relaxation is becoming more and more popular every year. Last year the affair was the biggest ever when 311 attended the dinner. This year there were 349 in attendance.

Kraut, Pork and Apple Dinner Promotion campaign will get under way October 15 through November 30. National Kraut Packers Association, has supplied complete kits of materials, including outline of publicity plans to the membership, and provided flyers and poster data to 5,500 chain and wholesale headquarters.

Chester I. Chase, Vice-president and Sales Manager of **Paulus Brothers Packing Company,** Salem, Oregon, will retire November 1. At that time Hawaiian Pineapple Company, parent company, will consolidate the sales departments of all of its subsidiaries at San Jose, California. Mr. Chase has been with Paulus for 25 years.

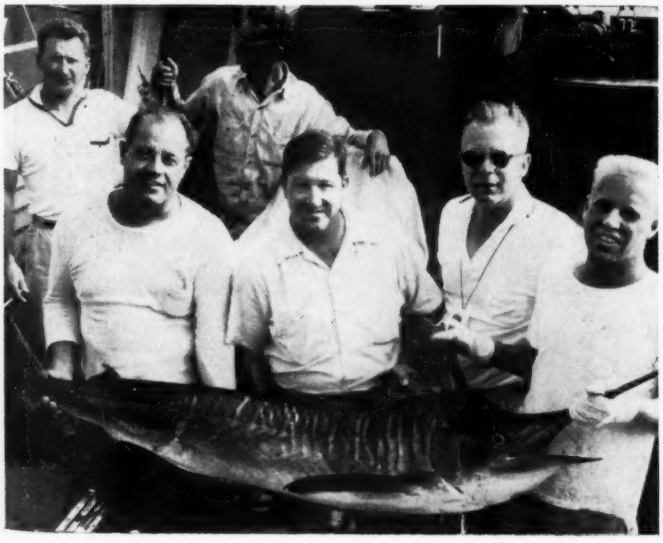
National Kraut Packers Association will hold an Outing and Business Meeting at Racine, Wisconsin, September 20 and 21. The Outing, with dinner in the evening of the 20th, and the Business Meeting on the morning of the 21st.

Texas Brands, Inc. — Winter Garden Processors, Carrizo Springs; Crystal City Canneries, Crystal City; and Schmidt Canning Company, San Benito, are three long established food processing companies in Southern Texas which have combined to form Texas Brands, Inc., a Texas corporation to process and distribute nationally a major line of "Texas Style" frozen and canned foods under the label of Texas Brands, it has been announced by John H. Palm, a director and co-founder with his brother, C. F. Palm, of the new company. Headquarters are located at 107 Ogden Lane, San Antonio, Texas. Officers of the company are P. L. Moore, President; W. H. Thornburg, Vice-President in charge of Merchandising; J. P. Donahue, Vice-President in charge of Specialty Food Production; and R. M. Collins, formerly President of Schmidt Canning Company, Vice-President and General Manager of the San Benito plant. W. C. Davisson is General Manager of the Winter Garden Processing Division, and L. B. Moore, Director of the company's freezing operations.

Ohio Field Day—Ohio Canning Crops Field Day will be held at the Northwestern Sub-Station of the Ohio Agricultural Experiment Station at Hoytville in Wood County, Saturday, September 8, 1956.

Lord-Mott Company, Inc., Baltimore, Maryland has announced the appointment of Shunk, Gregory and Herron Brokerage Company of Evansville, Indiana as representative for Southern Indiana, Southern Illinois and Western Kentucky area for the packer's full line of canned vegetables.

Ohio Canners Association will have a display in the Horticulture Building at the Ohio State Fair which opens on Friday, August 24 and continues through August 31. The display, built by Dr. Wilbur Gould, will contain a large electric map of Ohio showing the location of all canning plants in the State, and will also contain a model canning plant and a display of Ohio canned foods, photographs of the canning industry, and many other interesting sidelights. A brochure will be distributed listing the names and addresses of the members of the Ohio Canners Association, the county of location of the plants, items produced, and the brand names under which the products are sold. The brochure will also include the names of associate members of the Ohio Canners Association.



Ken Diehl, Jess Shipley and Wes Douglass of National Can Corporation went Marlin fishing at Ocean City, Maryland, earlier this month and were most successful. Six Marlin were raised and three were boated. Ken (front left) is shown with his Marlin weighing 80 pounds and measuring 7 feet 4 inches. Jess (front center) released his Marlin and received a handsome silver lighter for his action. Wes wears the sun glasses while the Captain's mate assists in holding the fish. In the rear is a doctor friend who accompanied the party, and the boat Captain, who are holding the second Marlin.

Sanitation Show — The First International Sanitation Maintenance Show and Conference, sponsored by the Industrial Sanitation Management Association, National Association of Bakery Sanitarians, and the Association of Food Industry Sanitarians will be held in the New York Coliseum, October 14 to 16, 1956. It will be the first event to highlight the growing importance of the sanitation field and of sanitation maintenance men in industry. Recent surveys have revealed that the sanitation maintenance executive's responsibilities include not only the usual maintenance in large industrial concerns, but also the painting, decorating, engineering maintenance, heating and ventilation, safety, lighting, pest control, and numerous other assignments formerly found in other fields, and the program has been so arranged to cover these subjects.

Packaging Exposition—The Packaging Machinery and Materials Exposition will be held in the Cleveland Public Auditorium September 11 through 14, 1956.

Soft Drink Exposition—The American Bottlers of Carbonated Beverages will hold its 1956 Annual Convention and International Soft Drink Industry Exposition in the Cleveland Auditorium, Cleveland, Ohio, November 12 to 15, 1956. Something over 200 exhibitors are expected to participate in the exposition.

Orange Crystals, Inc. — J. William Horsey, prominent in the Florida citrus industry for the past 12 years, was elected President of Orange Crystals, Inc. of Plant City, Florida, at a recent meeting of the Board of Directors. The meeting was held following substantial change in the ownership of the stock of the company, which was organized in 1953 to produce instant citrus juice crystals. Included in the stock sale was that held by Vacu-dry Company of California, which was active in the organization of the company and has managed it through its pioneering stage. With the experimental period of the adaption of the process to actual commercial production now successfully completed, Vacu-dry Company has relinquished its stock holdings to the new Florida management group headed by Mr. Horsey. W. Grant Horsey of Tampa has been elected Executive Vice-President; T. W. Griggs, also of Tampa, associated with the company for more than a year, becomes Vice-President and General Manager; and John A. McCleery of Tampa, formerly of Toronto, is Secretary-Treasurer. Directors of the company now include, in addition to the above named officers, Cody Fowler, Horace A. Knowlton, M.D. and Frank P. Adams. New major public financing for the company is anticipated, but no details have been announced.

CANCO TO BUILD PLATE PROCESSING PLANT IN INDIANA

Plans for construtcion at Hammond, Indiana of its first plant devoted exclusively to the processing of tinplate have been announced by the American Can Company. This installation, which is expected to be completed late next spring, is one of Canco's first steps in a previously announced $27 million program for large-scale plate-processing facilities throughout the country to combat rising steel prices.

Under the "coil strip" program, Canco will receive plate in large coils and then perform several of the operations formerly executed by steel companies. It will to a large extent eliminate the traditional use of pre-cut sheets of plate by Canco.

The Hammond plant, which will employ some 500 persons initially, will be the largest of the Canco plate processing plants. Other facilities are being installed at the company's Oakland, California, and Maywood, Illinois plants. Similar equipment will also be installed in other plants throughout the country in the near future.

Berger & Plate Company, San Francisco Food Brokers, have been appointed representatives for the Perk Dog Food Company of Los Angeles covering the Northern California market.

Well-Seasoned Thoughts
from BALTIMORE SPICE...
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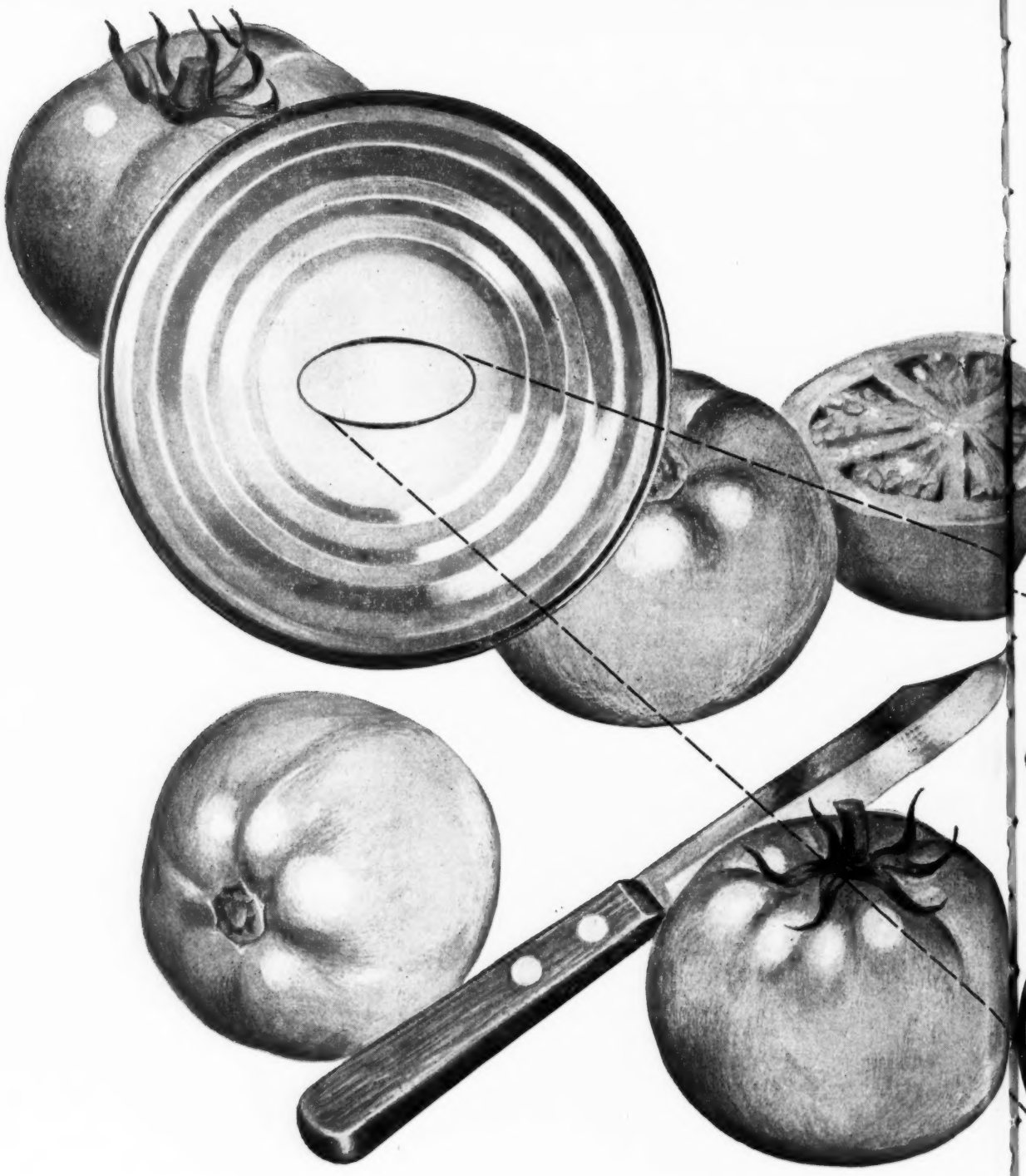

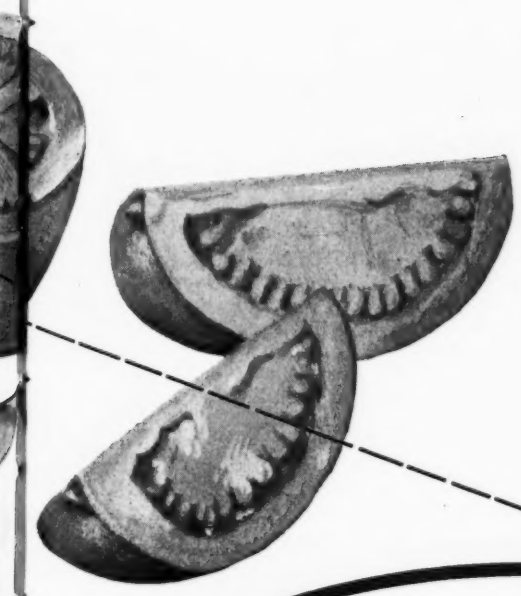

This oval symbolizes progress!

Canco's famous oval trade-mark has identified thousands of important canning "firsts." ☆ In the canning of tomatoes, for instance, American Can Company developed the equipment that made the steam-flow closure procedure commercially successful. This method eliminates the exhaust box and allows more efficient use of cannery space. ☆ Advances such as this are the result of Canco's continuing research and development program—a program which helps canners produce better and better products.

AMERICAN CAN COMPANY

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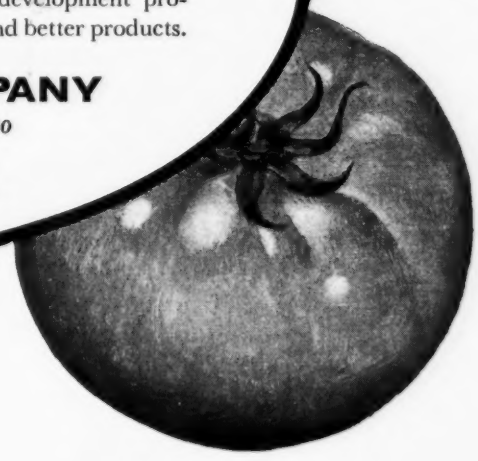

MARKET NEWS

NEW YORK MARKET

Tomatoes Snap Back — New Pack Beans Quoted Freely—Nice Quality Corn Pack In The Making—Watching Kraut Pack—Salmon Pack Improves Over '55—Peach Prices Stabilize—Good Inquiry For Cocktail—Routine Trading In Citrus.

By "New York Stater"

New York, N. Y., Aug. 24, 1956

THE SITUATION — A strong snapback in tomato prices featured the week in canned foods, with the situation complicated by the withdrawal of many sellers from the market. California reports noted a steadying in the market for new pack cling peaches, notwithstanding indications for a record pack this season. Reports on the progress of salmon canning in Aaska continue to highlight the spurt in red output, but pinks continue to lag.

THE OUTLOOK—Buyers are inclined to take hold of the market with more confidence, insofar as covering for nearby requirements is concerned, and the trading pace is beginning to quicken a little earlier than usual this season, many buyers being unwilling to wait for "the official kickoff", which customarily comes right after Labor Day. Buyers are studying pack progress reports carefully and are disposed to step in with fair orders where it looks like a potentially short supply.

TOMATOES—Many buyers overstayed the market on new pack Tri-States tomatoes, and are faced with higher replacement costs in consequence. A number of tomato canners withdrew from the market this week; others advanced their prices. Current minimums (many canners quote higher figures) find standard 1s at 95 cents, 303s at $1.25, 2½s as $1.95 and 10s at $7, all f.o.b. canneries. Reports from California during the week noted offerings of standard tomatoes at $1.25 for standard 303s, with 2½s at $1.85-$1.90 and 10s at $7.00, with extra standards at $1.40 for 303s, $2.10 for 2½s, and $7.50 for 10s, f.o.b. canneries.

BEANS — New York State canners are offering new pack green beans on the basis of $1.20 for standard cut 303s, with extra standards ranging $1.25 to $1.45, as to sieve, and fancy listing at $2.90 for 1-sieve whole beans, with fancy cut at $1.50-1.55. On wax beans, extra standard 303s list at $1.35 to $1.45, with fancy ranging $2.30 for 3-sieve whole up to $2.70 for the 1-sieve. Midwestern canners quote new pack green beans at $1.40 to $1.50 for extra standard cut 303s, with fancy cut at $1.55 to $1.70 and fancy whole held at $2.40 for 1 and 2 sieve and $2.20 for 3-sieve. On wax beans in the midwest, extra standard 303s range $1.45-$1.50, with fancy whole mixed 1 and 2 sieve at $2.40 and fancy cut at $1.60-$1.70.

CORN — With the pack in the Tri-States running largely to fancy quality, distributors are beginning to wonder where their standard corn will come from this season. Fancy crushed golden 303s continues available at $1.55, with extra standard at $1.40.

KRAUT—With the new pack season just commencing, buyers are looking the market over carefully. New York State packers list 303s at $1.40, with 2½s at $1.90 and 10s at $6.40. Midwestern canners, on the other hand, are still offering 1955 pack at substantially below these levels, with 303s as low as $1.30, 2½s at $1.75 and 10s around $6.00 per dozen, all f.o.b. canneries.

SALMON—Total Alaska pack up to August 11 aggregated 2,317,016 cases, against 2,099,798 cases in the like period a year ago. Formal openings have not yet been announced, but some business is being booked at $33 per case for red talls, $23 for pinks, $30 for cohoes and $21 for chums. Pink supply is short, and Seattle reports indicate the likelihood of a $24 market on talls. Trade demand, aside from pinks, is marking time until final pack reports are in and the major packers have come out with their prices for the coming marketing season.

SARDINES—There was no change reported in sardine prices during the week, and demand continued generally along routine lines.

PEACHES — With volume canning operations under way in California on clings, reports indicate a record pack in prospect. Meanwhile, however, the market has stabilized to some extent, with bottom on choice halves $2.55 for 2½s, with sliced at $2.60. On 303s, halves are held at $1.70 and up, with sliced at $1.72½-$1.75 on competitive brands. Canners have booked a heavy volume on new pack Elbertas and the market is in strong position, with fancy 2½s quoted at $3.40 or better, with choice at $2.90 and irregulars in heavy syrup at $2.65, all f.o.b. canneries.

COCKTAIL — A fair inquiry is reported for fruit cocktail, with competitive brands in California holding at $2.10 for choice 303s and $3.25 for 2½s, with 10s at $12, all f.o.b. canneries.

OTHER FRUITS — A tight supply position is reported developing in No. 10 choice halves apricots in California, reflecting rather heavy buying for the armed forces and the curtailed pack this season. Buyers are not taking hold of the market for new pack Bartlet pears to any extent. California offerings find fancy 2½s at $3.85 and upwards, with choice at $3.45 and standards at $3.25, while 303s are quoted at $2.40, $2.25, and $2.05, respectively.

CITRUS—There were no further price developments in the Florida canned citrus situation during the week. Trading is routine, reflecting an absence of offerings of most wanted grades. Canners are optimistic for the coming season, particularly in orange juice, pointing to the increasing export call for U. S. citrus products and the sharp increase in the diversion of oranges to the chilled fresh juice market.

STOCKS AND SHIPMENTS

National Canners Association's Division of Statistics this week issued the following figures on stocks and shipments:

CANNED CORN—Out of a total supply of 34,529,848 actual cases, shipments to August 1 amounted to 32,384,336 cases, leaving stocks on hand August 1 at 2,145,512 cases, which figure compares with 5,321,519 cases on hand the same date a year ago. On the basis of 24/2 the August 1 stocks amounted to 1,794,000 cases as compared with 4,708,000 cases on August 1, 1955.

CANNED LIMA BEANS—Out of a total supply of 4,149,065 actual cases of canned lima beans shipments to August 1 amounted to 3,074,785 cases, leaving stocks on hand August 1 at 1,074,280 cases, which compares with 969,604 cases on hand the same date a year ago. On the basis of 24/2 the August 1 stocks

amounted to 911,000 cases as compared with 865,000 cases on August 1, 1955.

CANNED BABY FOODS—Out of a total supply for the period January 1 through July of 151,542,000 dozens of canned baby foods, shipments for the period amounted to 96,603,000 dozens, leaving canners' stocks August 1 at 54,939,000 dozens, which compares with 59,086,000 dozens in canners' hands the same date last year.

CITRUS STOCKS

The Florida Canners Assoication in its report to August 11, 1956, shows a total supply of 34,987,625 cases 24/2 of canned citrus juices, including grapefruit juice, orange juice, and combination juice, against which shipments to that same date amounted to 30,169,514 cases, leaving stocks on hand August 11 of 4,818,111 cases.

FROZEN ORANGE CONCENTRATE —The Florida Canners Association reports a total supply of 84,243,380 gallons of frozen orange concentrate as of August 11, 1956, against which shipments amounted to 53,306,285 gallons, leaving stocks on hand at that date at 30,937,095 gallons, which figure compares with 26,228,657 gallons on hand at approximately that date a year ago (August 13).

No figures were available for stocks on hand for frozen grapefruit concentrate, frozen blended concentrate, or frozen tangerine concentrate.

USDA BUYS GREEN BEANS

Purchase of 109,070 cases of canned green beans for distribution to schools under the provisions of the National School Lunch Act during the period September 10 through October 8, 1956, was announced August 17 by the U. S. Department of Agriculture.

Purchases consisted of 101,725 cases of No. 10 size cans and 7,345 cases of No. 303's. Prices for No. 10s' ranged from $3.42 to $3.75 per case in Western states and from $3.635 to $4.22 in other areas. The 303's were purchased at $2.55 per case.

Transportation costs were given consideration in making the acceptance. All of the above prices are exclusive of cash discounts. These purchases are the result of offers received in response to the Department's announcement of August 3, 1956 and are in addition to the 327,875 cases of No. 10's purchased on August 3.

•

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20 S. Gay Street, Baltimore 2, Md.

CROPS and WEATHER

(Continued from Page 9)

OHIO, Aug. 22 — Retarded by cool weather. Good quality. Will be in full operation by August 28. Need five weeks of hot, dry weather to bring yields up.

CIRCLEVILLE, OHIO, Aug. 15—Look very good. Costs increased substantially.

NEW WESTON, OHIO, Aug. 15—Crop has the potential of a good yield. Good fruit set has been observed. However, excessive moisture during the growing season has diminished the overall prospect for a bumper crop. Harvesting expected to get into full swing the week of August 27.

NORTH BALTIMORE, OHIO, Aug. 15 — Prospects at present time are for a slightly larger tomato and juice pack than last year. Our fields are looking very good with approximately a 90 percent stand. The fruit is a little slow in ripening due to the cool, damp nights that we are having. There is a heavy setting of fruit on the vines and plenty of blossoms. Looks like a 12 to 15 ton yield, if the weather will change and ripen the fruit. Looks as if there will not be much packed before first of September.

OAK HARBOR, OHIO, Aug. 20 — Unseasonal cool weather and excessive rains have damaged crop to some extent, how much remains to be seen when harvest is complete. Doubt if yield will be over 10 tons per acre. Average past several years has been near 13 tons.

PENNSYLVANIA, Aug. 22 — Ripening slow with color off. Moving to canners but not in volume. Need late fall for normal harvest of good quality and yield.

TRI-STATES, Aug. 21—Rain this week interrupted harvest about a day in most places but giving minimum damage. Still picking in Virginia but will probably finish next week, with color and quality still poor. Heavy but not to glut stage on Central and Upper Peninsula this week. Most canners getting raw stock from other local areas. Southern New Jersey reports some loss from hot weather with poor color, more than normal rotting of fruit and anthracnose getting to be a problem. Central New Jersey reports that two day rain did only minimum damage and that top deliveries are expected this week with excellent fruit condition. This will be a big week for early varieties with next week anticipated the big one for late varieties.

GOODVIEW, VA., Aug. 14—Acreage about same as last year. Weather has been extremely hot and dry. Setting only fair due to blooms being killed by extreme hot weather. From the way it looks now would say our pack will be about 70 percent of last year.

FRUITS

SEBASTOPOL, CALIF., Aug. 11—Apples: Crop about 25 percent less than 1955.

DELAWARE & MARYLAND, Aug. 20—Apples & Peaches: In North Central Maryland a good quality crop of Summer Rambo apples and Hale Haven peaches are being picked.

STERLING, N. Y., Aug. 15 — Cherries: Pack completed. Deliveries approximately 50 percent of last year. Quality good.

Apples: Prospects for this year about 70 percent of last year.

WILLIAMSON, N. Y., Aug. 16 — Sour Cherries: Finished on August 9. Actual production bore out estimate of 45 percent of a normal crop.

Prunes: Stanley will yield fairly well but other varieties off more than 50 percent from last year.

Apples: Crop for processing rather on the short side this year. Rhode Island Greening less than one-third of normal, and other varieties off 40 to 60 percent. Soft varieties such as MacIntosh and Wealthy will yield just about as much as last year. For this class, Cortland is off more than any other variety.

OTHER ITEMS

GENEVA, N. Y., Aug. 20—Cabbage for Kraut: Acreage is substantially higher than last year and probably higher than average for recent years. Growing conditions ideal. All present indications point to a bumper crop. Several kraut packers have already begun cutting cabbage grown for the fresh market due to present weakness in that market. Actual kraut varieties will be a little late this year, beginning about September 15.

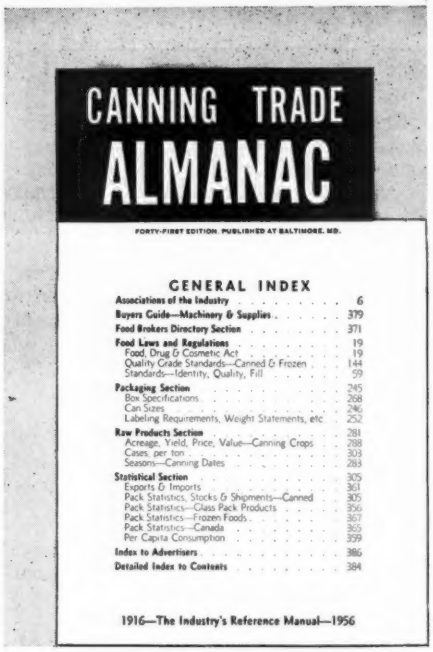
OAK HARBOR, OHIO, Aug. 20—Cucumbers for Pickles: Cool nights and excessive rains have retarded setting of fruit and consequently yield is down below average.

Pumpkin: Vines look good but no doubt cool weather and excessive rains have hindered setting of fruit.

GREEN BAY, WIS., Aug. 20 — Beets & Carrots: Have made splendid progress; beets sizing too fast.

SUSSEX, WIS., Aug. 15—Beets & Carrots: Look better than any time in past three years. We've started operations and indications are for a fine pack of good quality.

UNION GROVE, WIS., Aug. 17—Cabbage for Kraut: Crop looks good; off to a good start. Should produce somewhat better than average.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FROZEN ASPARAGUS PACK

(Continued from page 6)

a decrease in the East and South. Production in the West—and principally in California—was responsible for the size of this year's frozen asparagus pack. In recent years, the West accounted for 50 percent to 52 percent of the total pack, but the figure jumped to nearly 62 percent this year.

Pack distribution remains generally the same—approximately two-thirds in retail sizes and one-third in institutional sizes. The 10 ounce package continues to be the popular retail size, but this year there was a significant increase in use of the 8 ounce package, which had been declining. The 2½ pound contianer is still used almost exclusively for the institutional pack.

Further details of the 1956 production by region and container size appear in the accompanying table.

FROZEN ASPARAGUS PACKS

TOTAL UNITED STATES PACK

Year	*Pounds*
1942	5,769,452
1943	9,619,255
1944	12,339,171
1945	20,637,590
1946	28,316,074
1947	10,737,171
1948	18,321,209
1949	18,422,240
1950	22,309,199
1951	23,561,803
1952	25,460,043
1953	32,945,017
1954	25,779,827

PACK BY REGION

Size	1955 Pounds	Preliminary 1956 Pounds
East and South	13,492,316	12,810,157
Midwest	724,476	1,213,365
West	14,452,558	22,170,937
Total	28,669,350	36,194,459

PACK BY SIZE OF CONTAINER

Region	1955 Pounds	Preliminary 1956 Pounds
8 ounces	986,869	3,227,700
10 ounces	18,204,777	20,055,586
Other retail sizes	1,250	723,069
2½ pounds	9,365,676	12,176,094
Other sizes	110,778	12,010
Total	28,669,350	36,194,459

Source: Reports of individual packers collected and compiled by the National Association of Frozen Food Packers.

FROZEN SPINACH AT RECORD HIGH

This year the spring pack of frozen spinach soared to a new high of 81,442,535 pounds, according to a survey made recently by the National Association of Frozen Food Packers. This production total exceeded last year's record pack of nearly 66.9 million pounds by about 22 percent.

Regional production followed the traditional pattern — roughly one-third in the East and South and two-thirds in the West, chiefly California. However, a reversal of a trend was noted in that a somewhat greater percentage of the total pack was in the East and South this year, where production had shown a slight decline in recent years.

Following the normal pattern, about three quarters of the 1956 pack was in retail size packages, mainly the 12 ounce. However, the 10 ounce container has moved into a position of importance, evidently a growing trend. Most of the institutional pack continues to appear in 3 pound containers, with only a minor portion in the 2½ pound size.

Further details of 1956 production by region and container size appear in the accompanying table.

SPRING PACK OF FROZEN SPINACH

(January 1 to June 30)

TOTAL UNITED STATES SPRING PACK

Year	*Pounds*
1944	12,794,679
1945	12,661,154
1946	18,306,950
1947	11,779,585
1948	19,460,909
1949	37,348,572
1950	28,335,195
1951	54,807,043
1952	58,286,756
1953	66,887,060
1954	43,198,061

SPRING PACK BY REGION

Region	1955 Pounds	1956 Pounds
East and South	21,571,158	31,034,032
West	45,318,799	50,408,503
Total	66,889,957	81,442,535

Size	1955 Pounds	1956 Pounds
10 ounce	5,063,358	16,301,767
12 ounce	36,397,047	44,050,441
Other retail Sizes	5,302,700	289,884
2½ pounds	2,391,540	2,137,789
3 pounds	17,148,544	18,438,932
Other sizes	586,768	123,722
Total	66,889,957	81,442,535

Source: Reports of individual packers collected and compiled by the National Association of Frozen Food Packers.

WALUNT GROWERS OPEN HUGE PLANT

The world's largest walnut processing plant officially opened its doors August 23 in Stockton, California, while thousands of Diamond Walnut Growers and their families gathered tosee their multi-million dollar investment.

Built, owned and operated by 9,200 California members of the Diamond Walnut Growers, Inc., a cooperative association, this headquarters-plant will annually ship 100,000,000 pounds of walnuts to all corners of the United States. That's 70 percent of the entire national crop—a figure which squarely places the Association as the Number One producer of walnuts.

The plant, located on a 50-acre site in Stockton, boasts completely modern equipment. Coincidental with the opening, Diamond Walnut Growers announced a stepped-up advertising campaign and colorful new labels to enhance both shelled an in-shell walnut packages.

On hand for the dedication ceremonies was Ezra Taft Benson, U. S. Secretary of Agriculture, who addressed the group. The event was covered by television and films of the ceremonies will be shown on NBC's "Home Show" across the nation on November 15.

CANNED FOOD PRICES

(Spot prices per dozen F.O.B. cannery unless otherwise specified.)

ASPARAGUS

Calif., Fcy. All Gr., No. 2,
- Colossal 4.90
- Mammoth 4.80
- Large 4.75

Gr. Tip & Wh. Colossal 4.10
- Mammoth & Large 4.10

N. J., Fcy., All Gr. No. 2
- Mammoth Spears 4.80-5.00
- Large Spears 4.60-4.70
- Medium Spears 4.40
- Small Spears 4.30

Mid-W., Fcy All Gr. Cuts & Tips
- No. 8 oz. 1.65
- No. 1 Pic. 1.85
- No. 300 ..... 2.30

BEANS, STRINGLESS, GREEN

MARYLAND

Fcy., Fr. Style, 8 oz. ..... —
- No. 303 ..... 1.70-1.75
- No. 10 ..... 10.00

Fcy., Cut, Gr., No. 303 ..... 1.60
- No. 10 ..... 9.00

Ex. Std., Cut Gr., 8 oz. ..... .97½
- No. 303 ..... 1.30
- No. 10 ..... 7.00

Std., Cut, Gr., No. 303 ..... 1.05-1.15
- No. 10 ..... 5.75-6.00

NEW YORK & PA. (New)

Gr. Wh., Fcy., 3 sv., No. 303 ..... 2.10
- No. 10 ..... 11.25

Cut, Fcy., No. 303 ..... 1.50-1.75
- No. 10 ..... 9.00-9.50

Ex. Std., Cut, No. 303 ..... 1.30-1.45
- No. 10 ..... 8.50

Std., Cut, No. 303 ..... 1.20-1.25
- No. 10 ..... 6.75

Fcy., Fr. Style, No. 303 ..... 1.70
- No. 10 ..... 9.25

Wax, Fcy., Wh. 3 sv., No. 303 ..... 2.30
- No. 10 ..... 11.75

Cut, 3 sv., No. 303 ..... 1.75-1.85
- No. 10 ..... 9.75-10.00

Ex. Std., Cut, No. 303 ..... 1.35-1.45
- No. 10 ..... 8.60

Std., Cut, No. 303 ..... 1.30
- No. 10 ..... 7.50

FLORIDA

Std., Cut, No. 303 ..... 1.15

MID-WEST

Gr., Wh., Fcy., No. 303 ..... 2.20-2.40
- No. 10 ..... 11.50

Fcy., Cut, No. 303 ..... 1.55-1.70
- No. 10 ..... 9.50-10.00

Ex. Std., No. 303 ..... 1.40-1.50
- No. 10 ..... 7.25

Std., Cut, No. 303 ..... 1.15
- No. 10 ..... 6.25

Wax, Fcy., Cut, 3 sv., No. 303 ..... 1.70
- No. 10 ..... 10.00

4 sv., No. 303 ..... 1.60
- No. 10 ..... 9.00

Ex. Std., No. 303 ..... 1.45-1.50
- No. 10 ..... 8.25

OZARKS

Std., Cut, Gr., No. 303 ..... 1.15
- No. 10 ..... 6.25

N.W. & Cal. Blue Lakes

Wh., Fcy., 2 sv., No. 303 ..... 2.35
- No. 10 ..... 12.50

3 sv., No. 303 ..... 2.10
- No. 10 ..... 11.75

Cut, Fcy., 3 sv., No. 303 ..... 1.95
- 4 sv., No. 303 ..... 1.70
- No. 10 ..... 9.35

BEANS, LIMA

EAST

Fcy., Tiny Gr., No. 303 ..... 2.00-2.10
- Small 1.75-1.85
- Medium 1.65-1.75
- No. 10 ..... —

BEETS

Md., Fcy. cut, Diced, 303 ..... 1.05-1.10

Fcy., Sliced No. 303 ..... 1.30

Midwest, Fcy., Sl., No. 8 oz. ..... .85

Fcy., Sl., No. 8 oz. ..... .85
- No. 303 ..... 1.30
- No. 10 ..... 6.50

Diced, No. 303 ..... 1.10
- No. 10 ..... 5.50

Cut, No. 303 ..... 1.05
- No. 10 ..... 5.00

Wh., Fcy., No. 10—80/ov. 8.75
- No. 10—120/ov. 10.00
- No. 10—150/ov. 10.75
- No. 10—200/ov. 12.00-12.50
- No. 10—300/ov. 13.50
- No. 10—400/ov. 14.75

N. Y. Fcy., Cut & Diced, 303's 1.05-1.10
- Sliced 303's 1.25

CARROTS

Mid-West, Fancy, Diced,
- No. 303 ..... 1.10
- No. 10 ..... 5.50

East, Fcy., Diced, No. 303 ..... 1.20-1.25
- No. 10 ..... 6.50-6.65

CORN

EAST

W.K. & C.S. Golden

Fcy., No. 303 ..... 1.50-1.70
- No. 10 ..... 9.25-9.50

Ex. Std., No. 303 ..... 1.40-1.50
- No. 10 ..... 9.00

Std., No. 303 ..... 1.30
- No. 10 ..... nom.

Shoepeg, Fcy., No. 303 ..... 1.50-1.70
- No. 10 ..... 9.50-10.00

MIDWEST

W.K., Gold., Fcy., No. 303 ..... 1.55
- No. 10 ..... 9.25

Ex Std., No. 303 ..... 1.35-1.40
- No. 10 ..... 8.25-8.50

C.S., Fcy., Gold., No. 303 ..... 1.47½-1.50
- No. 10 ..... 9.00

Ex. Std., No. 303 ..... 1.25-1.30
- No. 10 ..... 8.75

Std., No. 303 ..... 1.15-1.20
- No. 10 ..... 7.50

W.K. & C.S. Co. Gent.

Fcy., No. 303 ..... 1.60-1.65
- No. 10 ..... 9.25-9.50

Ex. Std., No. 303 ..... 1.55
- No. 10 ..... 8.75

Std., No. 303 ..... 1.15-1.20
- No. 10 ..... 7.50

PEAS

EAST ALASKAS

Fcy., 1 sv., 8 oz. 1.70
- 1 sv., No. 303 ..... 2.70
- 2 sv., 8 oz. 1.40
- 2 sv., No. 303 ..... 1.85-1.95
- 2 sv., No. 10 ..... 12.40
- 3 sv., No. 303 ..... 1.75
- 3 sv., No. 10 ..... 9.85

Ex. Std., 2 sv., No. 303 ..... 1.65-1.70
- 3 sv., No. 303 ..... 1.55

Std., 3 sv., No. 303 ..... 1.35-1.40
- 4 sv., No. 303 ..... 1.25
- Pod Run, No. 303 ..... 1.20

EAST SWEETS

Fcy., Pod Run, No. 303 ..... 1.40

Ex. Std. 1.30

Std. 1.10-1.15

MIDWEST ALASKAS

Fcy., 1 sv., 8 oz. 1.60-1.75
- 1 sv., No. 303 ..... 2.60-2.65
- 1 sv., No. 10 ..... 13.50
- 2 sv., No. 303 ..... 2.25-2.30
- 2 sv., No. 10 ..... 12.50
- 3 sv., No. 303 ..... 1.70-1.75
- 3 sv., No. 10 ..... 9.50
- Ung., No. 10 ..... —

Ex. Std., 3 sv., 8 oz. ..... .95
- 3 sv., No. 303 ..... 1.50
- 3 sv., No. 10 ..... 8.75
- 4 sv., No. 303 ..... 1.35-1.40
- 4 sv., No. 10 ..... 8.00

Std., 3 sv., 8 oz. ..... .90
- 3 sv., No. 303 ..... 1.35
- 3 sv., No. 10 ..... 8.00
- 4 sv., 8 oz. ..... .85
- 4 sv., No. 303 ..... 1.30
- 4 sv., No. 10 ..... 7.25

MIDWEST SWEETS

Fcy., 3 sv., No. 303 ..... 1.75-1.80
- No. 10 ..... 9.50

Fcy., 4 sv., No. 303 ..... 1.60-1.65
- No. 10 ..... 8.50-8.75
- Ungraded, No. 303 ..... 1.50
- No. 10 ..... —

Ex. Std., 4 sv., No. 303 ..... 1.35-1.40
- 4 sv., No. 10 ..... 8.00

PUMPKIN

Midwest, Fcy., No. 303. (nom.) 1.10
- No. 2½ ..... (nom.) 1.50-1.60
- No. 10 ..... (nom.) 5.50

East, Fcy.,
- No. 2½ ..... (nom.) 1.50-1.60
- No. 10 ..... (nom.) 5.50-6.00

SAUERKRAUT

Midwest, Fcy.,
- No. 303 ..... 1.30-1.32½
- No. 2½ 1.75-1.90
- No. 10 ..... 6.00-6.40

N. Y., Fcy., No. 2½ 1.90-2.00
- No. 10 ..... 6.40-6.50

SPINACH

Tri-State, Fcy., No. 303 ..... 1.35-1.40
- No. 2½ 2.00
- No. 10 ..... 6.50-6.75

Ozark, Fcy., No. 303 ..... 1.15
- No. 2½ 1.70
- No. 10 ..... —

Calif., Fcy., No. 303 ..... 1.15
- No. 2½ 1.60
- No. 10 ..... 4.75

TOMATOES

TRI-STATES

Ex. Std., No. 2½ 2.40
- No. 10 ..... 8.25

Std., No. 303 ..... 1.25-1.35
- No. 2½ 1.95-2.10
- No. 10 ..... 7.25-7.50

Fla., Std., No. 303 ..... 1.15-1.20
- No. 2½ 2.00
- No. 10 ..... 7.00

Mid-West, Fcy., No. 1 .....
- No. 303 ..... 2.00-2.10

Ex. Std., No. 1 ..... 1.15-1.22½
- No. 303 ..... 1.60-1.70
- No. 2½ 2.65-2.75
- No. 10 ..... 8.50-8.75

Std., No. 303 ..... 1.40-1.45
- No. 2½ 2.45
- No. 10 ..... 8.25

Calif., Fcy., S.P., No. 303 ..... 1.75
- No. 2½ 2.50
- No. 10 ..... 9.50-9.75

Ex. Std., No. 303 ..... 1.40-1.42½
- No. 2½ 2.10
- No. 10 ..... 7.75

Std., No. 303 ..... 1.25
- No. 2½ 1.85-1.90
- No. 10 ..... 6.75-7.00

Ozarks, Std., No. 303 ..... 1.20
- No. 10 ..... 6.75

Texas, Std., No. 303 ..... 1.20
- No. 10 ..... 6.50-6.75

TOMATO CATSUP

Calif., Fcy., 14 oz. 1.80-1.90
- No. 10 ..... 10.00-10.50

Mid-West, Fcy., 14 oz. 1.90
- No. 10 ..... 11.70

Md., Fcy., No. 10 ..... 12.00

TOMATO PASTE (Per Case)

Calif., Fcy., 96/6 oz. 6.75
- No. 10 (per doz.) 15.00-16.25

TOMATO PUREE

Calif., Fcy., 1.06, No. 303 .. 1.45-1.50
- No. 2½ 2.35-2.40
- No. 10 ..... 7.00-7.25

Mid-West, Fcy., 1.045,
- No. 2 ..... 1.70
- No. 10 ..... 7.50-8.00

Md., Fcy., 1.045, No. 1 ..... 1.10
- No. 10 ..... 7.75

FRUITS

APPLE SAUCE

East, Fcy., No. 303 ..... 1.60
- No. 10 ..... 8.25

Calif. (gravensteins)
- No. 303, Fcy. 1.55
- No. 10 ..... 9.00

APPLES (East)

No 10, Sl. 9.50-10.50

APRICOTS

Halves, Fcy., No. 2½ 3.75
- No. 10 ..... 12.75

Choice, No. 2½ 3.15
- No. 10 ..... 11.15

Std., No. 2½ 2.85
- No. 10 ..... 10.00

Fcy., Wh. Peeled, No. 2½ 3.75
- No. 10 ..... 12.75

CHERRIES

R.S.P., Water, No. 303 (nom.) 2.25
- No. 2 (nom.) 2.50
- No. 10 (nom.) 12.50

Calif., R.A., Fcy., 8 oz. ..... —
- No. 303 ..... —
- No. 2½ ..... —
- No. 10 ..... —

Northwest, R.A., Fcy., 8 oz. ..... —
- No. 303 ..... —
- No. 2½ ..... —
- No. 10 ..... —

COCKTAIL

Fcy., No. 303 ..... 2.17½
- No. 2½ 3.40
- No. 10 ..... 12.50

Choice, No. 303 ..... 2.10
- No. 2½ 3.25
- No. 10 ..... 12.00

PEACHES

Calif., Cling, Fcy.,
- No. 303 ..... 1.92½-2.00
- No. 2½ 2.95-3.05
- No. 10 ..... 10.25-10.50

Choice, No. 303 ..... 1.70-1.75
- No. 2½ 2.77½
- No. 10 ..... 9.85

Std., No. 303 ..... 1.70-1.72½
- No. 2½ 2.57½-2.60
- No. 10 ..... 9.15

Elberta, Fcy., No. 2½ 3.40-3.45
- No. 10 ..... —

Choice, No. 2½ 2.90-3.12½

PEARS

Calif. & N.W., Fcy.,
- No. 303 ..... 2.40-2.45
- No. 2½ 3.85-3.95
- No. 10 ..... —

Choice, No. 303 ..... 2.25 2.30
- No. 2½ 3.45-3.50
- No. 10 ..... 12.75-13.05

Std., No. 303 ..... 2.05-2.07½
- No. 2½ 3.25
- No. 10 ..... 11.75

PINEAPPLE

Hawaiian, Fcy., Sl., No. 2 ..... 2.95
- No. 2½ 3.45
- No. 10 ..... 13.10

Crushed, No. 2 ..... 2.40
- No. 2½ 2.95
- No. 10 ..... 9.60

Choice, Sl., No. 2 ..... 2.40
- No. 2½ 2.85
- No. 10 ..... 12.00

Std., Half Slices, No. 2 ..... 2.25
- No. 2½ 2.70
- No. 10 ..... 10.80

JUICES

APPLE

Midwest, 1 qt. gl. ..... —
- 46 oz. tin 2.60

CITRUS, BLENDED

Fla., No. 2 ..... 1.25
- 46 oz. 2.70

GRAPEFRUIT

Fla., No. 2 ..... 1.02½-1.05
- 46 oz. 2.25

ORANGE

Fla., No. 2 ..... 1.45
- 46 oz. 3.20

PINEAPPLE

Hawaiian, Fcy., No. 2 ..... 1.07½
- 46 oz. 2.25

TOMATO

Md., Pa., N. Y. 2.60-2.75

Mid-West, Fcy., No. 2 ..... 1.35
- 46 oz. 2.60-2.70
- No. 10 ..... 5.00

Calif., Fcy., No. 2 ..... 1.10
- 46 oz. 2.35
- No. 10 ..... 4.75

FISH

SALMON—PER CASE

(Nominally Quoted)

Alaska, Red, No. 1T 33.00-34.00
- ½'s 20.00-21.00

Medium Red, No. 1T 28.00
- ½'s 15.00-16.00

P.S. Sockeye ½'s 20.00

Pink, Tall, No. 1 ..... 23.00-24.00
- ½'s 12.50

Chum, Tall, No. 1 ..... 21.00
- ½'s 11.00

SARDINES—PER CASE

Calif., Ovals, 1's 7.25-7.50
- No. 1 T Nat. 5.25-5.50

Maine, ¼ Oil Keyless 7.10-7.50

TUNA—PER CASE

Fcy., White Meat, ½'s 12.75-14.00

Fcy., Light Meat, ½'s 11.00-12.00

Std., Light Meat 10.25
- Chunks 9.50
- Grated 7.25

CONVENTIONS • *and* • SCHOOLS

AUGUST 26 - 29, 1956 — NATIONAL-AMERICAN WHOLESALE GROCERS ASSOCIATION, Mid-Year Meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

SEPTEMBER 6-15, 1956 — NATIONAL GREEN OLIVE WEEK.

SEPTEMBER 13-22, 1956—NATIONAL TUNA WEEK.

SEPTEMBER 20-21, 1956—NATIONAL KRAUT PACKERS ASSOCIATION, Outing & Business Meeting, Racine, Wis.

SEPTEMBER 24-25, 1956—TEXAS CANNERS ASSOCIATION, Annual Meeting, Hilton Hotel, San Antonio, Texas.

SEPTEMBER 28-OCTOBER 2, 1956—AMERICAN MEAT INSTITUTE, Golden Anniversary Meeting, Palmer House, Chicago, Ill.

OCTOBER 4-5, 1956—MAYONNAISE & SALAD DRESSING MANUFACTURERS ASSOCIATION, Annual Meeting, Edgewater Beach Hotel, Chicago, Ill.

OCTOBER 7-10, 1956—NATIONAL ASSOCIATION OF FOOD CHAINS, Annual Convention, Chicago, Ill.

OCTOBER 17 - 19, 1956 — NATIONAL PICKLE PACKERS ASSOCIATION, 63rd Annual Meeting, Edgewater Beach Hotel, Chicago, Illinois.

OCTOBER 21-24, 1956 — PROTECTIVE PACKAGING & MATERIALS HANDLING EXPOSITION, 11th Annual, Kiel Auditorium, St. Louis, Mo.

OCTOBER 24-26, 1956 — ASSOCIATION OF FOOD INDUSTRY SANITARIANS, Annual Meeting, Casa Munras Hotel, Monterey, Calif.

OCTOBER 24-27, 1956—FLORIDA CANNERS ASSOCIATION, 25th Annual Convention, Hollywood Beach Hotel, Hollywood, Florida.

NOVEMBER 1, 1956 — ILLINOIS CANNERS ASSOCIATION, Annual Meeting, Bismarck Hotel, Chicago, Ill.

NOVEMBER 7-8, 1956 — WISCONSIN CANNERS ASSOCIATION, Annual Convention, Schroeder Hotel, Milwaukee, Wis.

NOVEMBER, 9-10, 1956 — IOWA-NEBRASKA CANNERS ASSOCIATION, Annual Meeting, Fort Des Moines Hotel, Des Moines, Iowa.

NOVEMBER 12-14, 1956 — GROCERY MANUFACTURERS OF AMERICA, Annual Convention, New York, N. Y.

NOVEMBER 14-16, 1956 — INDIANA CANNERS ASSOCIATION, Fall Convention, French Lick Sheraton Hotel, French Lick, Indiana.

NOVEMBER 15, 1956 - JANUARY 1, 1957—HOLIDAYS ARE PICKLE DAYS.

NOVEMBER 18-19, 1956 — PENNSYLVANIA CANNERS ASSOCIATION—42nd Annual Convention, Yorktowne Hotel, York, Pa.

NOVEMBER 26-27, 1956 — OHIO CANNERS ASSOCIATION, Annual Convention, Hotel Carter, Cleveland, Ohio.

NOVEMBER 29-30, 1956 — MICHIGAN CANNERS & FREEZERS ASSOCIATION, Fall Meeting, Pantlind Hotel, Grand Rapids, Mich.

DECEMBER 3-4, 1956—ONTARIO FOOD PROCESSORS ASSOCIATION, Annual Convention and Exhibit, Royal York Hotel, Toronto, Ont., Canada.

DECEMBER 3-4, 1956 — MINNESOTA CANNERS & FREEZERS ASSOCIATION, Annual Meeting, Hotel Radisson, Minneapolis, Minn.

DECEMBER 6-7, 1956 — TRI - STATE PACKERS ASSOCIATION, Annual Convention, Haddon-Hall, Atlantic City, New Jersey.

DECEMBER 13-14, 1956 — NEW YORK STATE CANNERS & FREEZERS ASSOCIATION, 71st Annual Meeting, Statler Hotel, Buffalo, N. Y.

JANUARY 6 - 10, 1957 — NATIONAL FROZEN FOOD CONVENTION, NAFFP, NFFDA, Fountainebleau Hotel, Miami Beach, Fla.

JANUARY 24-25, 1957 — CANNERS LEAGUE OF CALIFORNIA, 34th Annual Fruit & Vegetable Sample Cutting, Fairmont Hotel, San Francisco, Calif.

JANUARY 27-30, 1957 — NORTHWEST CANNERS & FREEZERS ASSOCIATION, Annual Convention, Multnomah Hotel, Portland, Ore.

JANUARY 30-31, 1957 — MINNESOTA CANNERS & FREEZERS ASSOCIATION, 10th Annual Canners & Fieldmen's Short Course, Kahler Hotel, Rochester, Minn.

JANUARY 30-FEBRUARY 1, 1957—PENNSYLVANIA CANNERS ASSOCIATION, 12th Annual Fieldmen's Conference, Pennsylvania State University, University Park, Pa.

FEBRUARY 4-6, 1957—MICHIGAN CONFERENCE FOR FIELDMEN AND PROCESSORS, Kellogg Center, Michigan State University, East Lansing, Mich.

FEBRUARY 10-13, 1957 — COOPERATIVE FOOD DISTRIBUTORS OF AMERICA, Annual Convention, Statler-Hilton Hotel, Dallas, Tex.

FEBRUARY 12-13, 1957—NEW YORK STATE CANNERS & FREEZERS ASSOCIATION, Canners School, Agricultural Experiment Station, Geneva, N. Y.

FEBRUARY 12-14, 1957 — TECHNICAL SCHOOL FOR PICKLE PACKERS, Kellogg Center, Michigan State University, East Lansing, Mich.

FEBRUARY 13-20, 1957 — NATIONAL CANNERS ASSOCIATION AND ALLIED INDUSTRIES, ANNUAL CONVENTION, 50th Anniversary, Chicago, Ill.

FEBRUARY 16-20, 1957 — CANNING MACHINERY & SUPPLIES ASSOCIATION, Machinery and Supplies Exhibition, Conrad Hilton Hotel, Chicago, Ill.

FEBRUARY 26 - 27, 1957 — IOWA-NEBRASKA CANNERS ASSOCIATION, Annual Canners Conference, Iowa State College, Ames, Iowa.

MARCH 17-20, 1957—NATIONAL-AMERICAN WHOLESALE GROCERS ASSOCIATION, 51st Annual Convention, Hotel Sherman, Chicago, Ill.

MARCH 25-26, 1957—CANNERS LEAGUE OF CALIFORNIA, 53rd Annual Meeting, Santa Barbara-Biltmore, Santa Barbara, Calif.

MAY 10-11, 1957—PENNSYLVANIA CANNERS ASSOCIATION, Sales Clinic, Bedford Springs Hotel, Bedford Springs, Pa.

PACK OF CANNED MEAT

The quantity of meat canned and meat products processed under federal inspection during the 1956 fiscal year, has been reported by the Agricultural Marketing Service, USDA, at 2,307,407,000 pounds, including quantities for defense.

CANNED MEAT AND MEAT PRODUCTS
FOR FISCAL YEAR, 1956
PROCESSED UNDER FEDERAL INSPECTION

(thousands of pounds)

	3 Lbs. & over	Under 3 Lbs.	Total
Luncheon meat	194,144	146,076	340,190
Canned hams	231,804	6,727	238,532
Beef hash	3,453	75,056	78,509
Chili con carne	8,793	140,633	149,426
Vienna sausage	2,039	61,030	63,069
Frankfurters and wieners in brine	122	3,291	3,412
Deviled ham	.....	9,360	9,360
Other potted and deviled meat prod.	12	41,604	41,616
Tamales	2,196	32,413	34,609
Sliced, dried beef	239	4,341	4,580
Chopped beef	100	24,070	24,170
Meat stew	1,161	97,158	98,318
Spaghetti meat products	2,360	75,412	77,772
Tongue (not pickled)	813	2,146	2,959
Vinegar pickled products	11,247	18,558	29,804
Sausage	142	8,987	9,129
Hamburger	3,435	92,982	96,417
Soups	22,042	571,775	593,817
Sausage in oil	4,174	4,231	8,405
Tripe	193	5,706	5,899
Brains	368	2,701	3,069
Loins and Picnics	28,601	1,395	29,996
All other products 20 percent or more meat	3,274	85,861	89,135
All other products less than 20 percent meat (exc. soup)	5,513	213,165	218,679
Total all products	526,197	1,724,677	2,250,873

Columns do not add to totals shown in all cases since rounded figures are used. Amounts packed for defense are not included in these items. Total production, including quantities for defense agencies, was 2,307,407 thousand pounds.

WANTED and FOR SALE

RATES, per insertion—straight reading, no display—one to three insertions per line 50¢, four or more consecutive insertions without change per line 40¢, minimum charge per Ad $1.00. Forms close Wednesday noon.

Address all numbered Ads: The Canning Trade, 20 S. Gay Street, Baltimore 2, Maryland.

FOR SALE—MACHINERY

WHEN IN NEED of food processing machinery of any kind wire or call: Ashley Mixon, Canning Machinery Exchange, Plainview (West) Texas.

We manufacture complete lines of food processing machinery for canned, frozen and fresh packed products. Wire us regarding your requirements. A. K. Robins & Co., Inc., Baltimore 2, Md.

USED AND REBUILT CANNING AND FROZEN FOOD MACHINERY. Also complete plant layout for greater efficiency from field to warehouse. Stainless Steel Equipment made to order. List your surplus equipment with us. Otto W. Cuyler, Webster, N. Y. Since 1912.

BOILERS NEW & REBUILT—Hand Coal & Oil fired. Sizes 5 - 500 H.P. Mallory Machinery Co., Baltimore 30, Md.

FOR SALE—Like new Urschel Model J. Dicer and Strip Cutter #215 with 5 H.P. Motor, ¼ inch cut, $1250; 3 Kook-More Koils, copper 3" coil, 60" and 42" coils together. L. H. Moore Canning Co., P. O. Box 1711, McAllen, Tex.

FOR SALE—Ammonia Compressor, York 12½ x 14½; Fitzpatrick Stainless Steel Comminuting Machines, Models F-8 & K; Hope Machine Co. type 18 Semi-Automatic Single Piston Stainless Steel Filler, fills up to gallon per stroke; Niagara T316 Stainless Steel Filter 500 sq. ft.; FMC Can Weigher; CEM Can Rinser; Standard Knapp Can Elevator; Standard Knapp Case Packer for cans; (2) 50 gal. St. St. Jacketed Tilt Kettles; (30) St. St. and St. Clad Stationary Jacketed Kettles from 40 gal. to 10,500 gal. sizes; (75) Welded Steel Tanks with Lastiglas or Mammut Lining from closed breweries (up to 23,400 gal. sizes). Perry Equipment Corp., 1402 N. 6th St., Philadelphia 22, Pa.

FOR SALE—1 used Tuc Flotation Washer, Double, motor-driven, equipped with 3 phase, 60 cycle, 220 volt motor, Serial No. WW 914. 1 used Tuc Rod-Shaker, (Double), stainless steel rods, self-cleaning, high speed, motor-driven, 3 phase, 60 cycle, 220-440 volt, Serial No. 645. Owatonna Canning Co., Owatonna, Minn.

WANTED—MACHINERY

WANTED—To buy 8 ft. Green Bean Blancher in good working condition. Give best price, age and condition in first letter. Rico Banana Company, Inc., Orocovis, Puerto Rico.

WANTED—For Export, complete small plant for processing whole tomatoes into ketchup, paste, extracts, etc.; we would like to buy modern, up-to-date used equipment for immediate delivery, and we are prepared to inspect and ship this equipment immediately; your offerings must have complete inventories of all equipment that is available, together with the manufacturer's name, illustrations, age, condition, motor specifications, and description of how the equipment is operating; if your personnel is available to dismantle and box for export, and if they would be interested in reerecting this plant, in our wonderful country, we will pay extra for this service. Please give details and photographs in first letter, together with prices. Adv. 56231, The Canning Trade.

SITUATIONS WANTED

POSITION WANTED—A capable and experienced Sales Manager, with well rounded institutional sales background desires position offering challenge; mobile. Adv. 56222, The Canning Trade.

MISCELLANEOUS

COMPLETE BEDDING OUTFITS—For Rent or Sale to house extra laborers. Interstate Bedding Co., 1621 W. Carroll Ave., Chicago 12, Ill. Tel. CHesapeake 3-4660.

WANTED—To buy job lots of canned foods, all sizes. Schmidt Wholesale Grocery, 818 Banklick St., Covington, Ky .

WANTED—A Contract Harvester with his own trucks and pickers to harvest both ripe and green tomatoes during the winter season at Homestead, Florida. Canners please pass this information on to your contract harvesters. Homestead Canning Co., P. O. Box 845, Homestead, Fla.

FOR SALE—FACTORIES

FOR SALE—Dog Food Canning Plant, Northwest, Ohio, 300,000 case capacity, 11 acres, 7 car B&O Siding, 34,000 sq. ft., two oil fired boilers. Complete tomato cannery included. The Buckeye Canning Co., Weston, Ohio.

5/8 HAMPERS

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THE CANNING TRADE

20 S. GAY STREET, BALTIMORE 2, MD.

AN IMPROVED SPRAY BOOM FOR ROW CROPS

(Continued from page 7)

the boom in transport position with an overall width of 8'6".

The entire boom can be rotated by the hydraulic control on the tractor through the lift link (Figure 2). This permits lifting the boomlets when turning or reversing the tractor. Slots in the boomlet mounting tube provide for a considerable degree of "float" (Figure 1), so the end of the boomlet can ride down into depressions or over humps when in the down position.

It is important to so locate the lift link attaching bracket that the boomlets cannot be lifted too high. The limit is usually imposed by the center boomlet and the tractor oil pan. To accurately adjust this point place the tractor hydraulic control in its extreme position, rotate the main boom with a pipe wrench until the center boomlet is up but clears the oil pan sufficiently. With the boom in this position install the lift link and its attaching bracket and weld the attaching bracket to the boom. It is important to set the hydraulic control stop for proper adjustment in the down position. Failure to make these adjustments may result in damage to the boom or the tractor oil pan.

The spray nozzles are mounted on branches of ⅜" standard pipe passing through the pipe clamp block and held in place by a set screw in that block. Number, type, and location of the nozzles depend on the crop to be sprayed, the spray material to be used, and the pest to be controlled. A main spray pipe header is carried on the center section of the boom and the ⅜" pipe on each boomlet is connected to this header by a piece of hose to provide for flexibility and row spacing adjustment. The mounting of the spray line on a 2-row Slosser boom as used for snap beans is shown in Figure 3. By replacing nozzles with plugs this boom may be used with one, three, or five nozzles per row and may be readily adapted to most row crops in 30" to 42" rows. The spray tank and pump may be mounted on the tractor or may be carried on a trailer towed behind the tractor. A quick acting valve should be provided, convenient to operator, for control of the spray.

Full information may be had by addressing requests for Miscellaneous Publication No. 269, to the Agricultural Engineering Department, University of Maryland, College Park, Maryland.

MECHANICAL BEAN PICKER REPORT

In his August 13 bulletin to members, William F. (Bill) Sherman, Secretary of the New York State Canners & Freezers Association, has the following to say about the mechanical bean picker: "After several years of trial and error with the mechanical bean picker, the Chisholm-Ryder Company, manufacturers of the machine, discovered late last season that with the removal of many parts which they heretofore felt were needed, the picker performed much better than ever before. Coupled with this discovery, they also, after considerable experimenting, came up with a suction-type fan instead of a blower and solved the one major obstacle which has been reducing the efficiency of the machine—clogging.

Almost overnight, the machine has come of age. We saw it work last week in Geneva and found the beans picked by this machine were just as clean as any hand picked beans we've seen. Not only that, but with the changes, they've been able to step up the speed so it is not difficult to pick up to two acres an hour, and in heavy vines, too.

There are approximately eighty of these machines in use throughout the country this season, but by next year we'll predict the number will show a tremendous jump. Sure, there are further perfections to be made on these machines, but for all practical purposes the machine has passed the test as a satisfactory harvester, joining an ever growing list of mechanical harvesters for processing crops.

Within two to three years we'll witness a revolutionary change in the bean business. There will be far fewer crews and better control over harvesting."

ROLE OF ATOMIC ENERGY IN FRUIT BREEDING STUDIED

Whether atomic radiations can produce genetic changes in fruits of practical value to the grower is one of the peaceful uses of this potent tool under investigation at the New York State Agricultural Experiment Station at Geneva. The project is in cooperation with the Brookhaven National Laboratory on Long Island.

"The effects of radiations on plants are mostly harmful," say Cornell fruit specialists of the State University at the Experiment Station in commenting on their investigations in the current issue of "Farm Research", the Station's quarterly magazine.

Small changes in the hereditary makeup of plants occur naturally and are known as "sports", explain the Station scientists. Red strains ofstandard apple varieties, such as McIntosh, Delicious, and Spy, are examples of "sporting".

"It is hoped that exposure of fruit plants to radiation will cause sports to occur more frequently, and that some of them may have qualities useful in a fruit breeding program," continue the scientists.

Apples and grapes are under study at present. The part of the plant to be exposed, the stage in the life cycle when exposure would be most effective, the length of exposure, the amount of radiation required to cause genetic changes, these and many other points must be determined, it is explained.

Treated material must then be propagated and grown for several years until fruit is produced and evidence obtained on the effects of the radiation treatments, say the Station workers.

ONE SPRAY TREATMENT KILLS POISON IVY

New Haven, August 22—Here's good news for those who have learned the hard way that poison ivy demands respect. A single application of a new poison ivy killer gave complete control of established ivy in an old orchard at the Experimental Farm of The Connecticut Agricultural Experiment Station in Mt. Carmel. Another widely used chemical killer of poison ivy gave apparent control three weeks after application, but about 10 percent of the treated vines resumed growth the following spring. The newer material, amino triazole, stopped the ivy in its tracks: there was no new growth in 1956.

Amino triazloe, in the Connecticut Station trial, was applied with a hand sprayer on August 7, 1955, at three different rates, with and without a wetting agent and another chemical known to retard plant growth. No comparisons among these treatments were possible because the lowest concentration used alone—¾ of a pound of active material to the acre — killed all ivy, as did all other treatments with amino triazole.

Another widely used killer of poison ivy effectively eliminated about 90 percent of the ivy, as indicated by growth in the spring of 1956. At least one more treatment at the rate of ¾ of a pound to the gallon would have been necessary for complete control.

Amino triazole is said to be non-corrosive to equipment, non-volatile, nonpoisonous to humans, and easily removed from spraying equipment. It will turn foliage white where it hits apple leaves, and care should be taken to avoid this damage. No trees under which amino triazole was applied have shown any sign of injury.

SOIL BANK ACREAGE

More than 550,000 agreements, covering over 12,300,000 acres of cropland were signed under the 1956 Acreage Reserve Program of the Soil Bank. Total maximum payments that could be earned under the signup would amount to nearly $261,000,000. According to reports from State ASC Committees, 537,172 farms were covered by the 553,328 agreements signed under the program. This indicates that a number of farms signed agreements covering more than one of the "basic" crops. Only farms with corn "base acreages" or allotments for wheat, cotton, rice, tobacco and peanuts were eligible to participate in the program. Largest number of agreements were signed by corn producers; 320,450 covering 5,450,194 acres on which they could earn a maximum of $180,629,284. Wheat producers were next with 110,515 agreements, covering 5,654,507 acres on which they could earn a total of $44,490,882.